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Filed : May 11, 1999

REMARKS

Claim 1 has been amended by this paper and Claim 5 has been canceled. The remaining claims remain unchanged by this amendment. Hence, by this paper, Claims 1, 2, 9, 18, 25, 28, 36 and 87-89 are presented for further examination.

The specific changes to the specification and the amended claims are shown in the above section entitled IN THE CLAIMS. On this set of pages, the insertions are underlined while the ~~deletions are stricken through~~.

In an Office Action mailed February 7, 2005, Claim 5 was objected to under 37 C.F.R. § 1.75(c), as being of improper dependant form for failing to further limit the subject matter of a previous claim. By this paper, Claim 5 has been canceled. Accordingly, Applicant submits that the basis for this objection has been removed.

In the Office Action, Claims 1, 2, 5, 9, 18, 25, 28, 36 and 87-89 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

With regard to Claim 1, the Examiner indicated that

“it is unclear how the analyte-specific signal element would be disposed confocally with the wobble groove such that the would be readable concurrently with said wobble groove and a definition for this limitation could not be found in the specification.”

The Examiner further indicated that

“it is not entirely clear if this limitation would indicate that the signal elements would be disposed substantially within the wobble groove, or if they would be outside the wobble groove. In addition, it is unclear what is performing the reading, rendering it unclear which patterns will be readable concurrently with the wobble groove, and which forms would not.”

With regard to a clarification of “what is performing the reading”, amended Claim 1 states “wherein said plurality of analyte-specific signal elements are disposed substantially confocally with said wobble groove such that they are readable by an optical head of the optical disc reader concurrently with said wobble groove.”

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By specifically identifying the component accomplishing the reading, Applicant submits that it would be well understood by those of skill in the art as to the scope of the area surrounding the wobble groove which may be read by the optical head of the optical disc reader. By placing the signal elements substantially confocally with the wobble groove, the signal elements are made readable by the optical head of the optical disc reader concurrently with the wobble groove.

As to the Examiner's questions regarding how the "analyte-specific signal elements would be disposed confocally with the wobble groove," Applicant refers to FIG 5D, along with page 46, line 25 through page 47, line 14 of the specification which states:

"FIG. 5D shows a single data layer first surface disc 130 of the present invention. As compared to the inverted disc of FIGS. 5B and 5C, the protective layer 116 has been removed and analyte-specific signal elements 136 have been disposed upon reflective surface 134.

"In such first surface assay discs, the analyte-specific signal elements are located in substantially the same focal plane as – that is substantially confocal with – the tracking (or other operational) features encoded in the reflective surface layer of the disc. The confocal geometry greatly simplifies the problem of achieving and maintaining focus concurrently on the disc's operational features and the analyte-specific signal elements.

"It will be understood that the analyte-specific signal elements and the operational (particularly, tracking) features need not be in the identical focal plane – it suffices that the signal elements and operational features are sufficiently confocal as to permit the disc reader's optical head to detect them both."
(Emphasis added)

Demonstrations confirming that the principles disclosed in the application used to generate a trackable optical disc with concurrently readable analyte-specific signal elements are described on pages 53-59 of the specification. In accomplishing these demonstrations, single data-layer, first-surface analyte-specific assay discs were manufactured essentially as depicted in FIG. 5D. In regard to these demonstrations, and referring to Figure 8, the specification at page 54, lines 24-29 states:

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“The video capture image suggests that many, if not all, of the latex spheres are positioned directly over the wobble groove. This orientation proves remarkably advantageous, maximizing the analyte-specific perturbation, and thus analyte-specific signal, in the tracking direction.”

Examples of these demonstrations are summarized at page 59, wherein it is noted on lines 21-28 that:

“The operational features of the disc including tracking features, are detected concurrently with and readily discriminated from analyte-specific signals using a single optical pickup. Example 2 particularly demonstrates that immunoassays for small molecule analytes may readily be adapted to detection using this system.” (Emphasis added)

From the above, one will readily appreciate that the specification clearly describes the limitation wherein analyte-specific signal elements are disposed substantially confocally with the wobble groove, wherein substantially confocal is defined as “substantially the same focal plane as the tracking (or other operational) features encoded in the reflective surface layer of the disc”. (see, e.g., page 47, lines 1-4). In addition, Claim 1, as presented herein, clearly indicates that the analyte-specific signal elements disposed substantially confocally with the wobble groove are “readable by an optical head of the optical disc reader”. Thus, Applicant submits that it is, in fact, clear as to what is performing the reading. With this understanding, it then also becomes clear which material would be readable concurrently with the wobble groove.

To further understand this technology, Applicant also directs the Examiner to page 64, lines 10-13 of the specification, in combination with Figure 23, wherein it is noted that “for use as an assay disc in accordance with the present invention, analyte-specific signal elements 236 may be deposited within wobbled land and groove area 22 of the sectors on the disc, as shown in FIG. 23”. The specification provides a summary teaching of these features at page 70, lines 10-29, wherein it teaches:

“As noted above, the analyte-specific signal elements are preferably disposed confocally with the operational features of the disk in the single data layer disks of the present invention. This permits the laser to focus concurrently on the analyte-specific signal elements and operational features of the disk.

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Furthermore, when signal elements fall directly into the operational features – in the disks exemplified herein, into the wobble groove – signal is maximized.

“It would be understood, however, that the analyte-specific signal elements and the operational (particularly, tracking) features need not be in the identical focal plane- it suffices that the signal elements and operational features be sufficiently confocal as to permit the disc reader’s optical head to detect them both.

Thus, analyte-specific signal elements may be disposed upon the laser-distal (that is disc-proximal) side of the cover rather than, or in addition to, on the disk surface itself.”

Applicant submits that the teachings presented above, as embodied in the claims presented herein, clearly point out and distinctly claim the subject matter which Applicant regards as the invention. Accordingly, Applicant respectfully submits that the rejection of Claim 1 under 35 U.S.C. § 112, second paragraph, has been overcome. In addition, the Examiner stated that the remaining claims are indefinite due to a dependence on an indefinite claim. Accordingly, it is respectfully submitted that since Claim 1 defines subject matter which is not indefinite, that the claims which depend therefrom also satisfy the requirements of 35 U.S.C. § 112, second paragraph, and it is respectfully requested that the rejection of these claims be withdrawn.

In the Office Action, Claim 1 was rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner stated that

“the claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, support for the limitation that the analyte-specific elements are readable concurrently with said wobble groove could not be found in the disclosure. If Applicant could point out the location in the disclosure where this limitation could be found, it would be greatly appreciated.” (Emphasis added)

Applicant respectfully refers to the previous discussion regarding the rejections under 35 U.S.C. § 112, second paragraph, wherein specific areas within the specification have been

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identified which clearly provide support for the indicated limitations and demonstrate that the inventors, at the time the application was filed, had possession of the claimed invention.

In view of the above, Applicant respectfully submits that the disclosure provides clear and ample support for the limitation that the analyte-specific elements are readable concurrently with the wobble groove. Accordingly, Applicant respectfully submits that the requirements of 35 U.S.C. § 112, first paragraph, are satisfied by the application, and respectfully requests that the rejection of Claim 1 under 35 U.S.C. § 112, first paragraph, be withdrawn.

In the Office Action, Claims 1-2 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 22-27 of copending Application No. 09/566,056. The Examiner noted that this is a provisional obviousness-type double patenting rejection because the conflicting claims have not, in fact, been patented. Applicant respectfully submits that the claims, as presented herein, are patentably distinct from the claims of the indicated, copending application. However, if the Examiner continues to assert the obviousness-type patenting rejection once the claims are allowable, Applicant will submit a Terminal Disclaimer structured to overcome the double patenting rejection.

Applicant also wishes to draw the Examiner's attention to the fact that an Information Disclosure Statement was filed in the above-identified application on February 25, 2005. Applicant respectfully requests the Examiner to fully consider the references cited therein before issuance of any further action in this case.

In view of the foregoing, Applicant respectfully submits that Claims 1, 2, 9, 18, 25, 28, 36 and 87-89, as presented herein, define subject matter that is patentable over the art of record. Accordingly, Applicant respectfully submits that these claims are now in condition for immediate allowance and such prompt allowance of the same is respectfully requested.

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CONCLUSION

The Applicant has endeavored to address all of the concerns of the Examiner in view of the recent Office Action directed to the above-identified application. Accordingly, amendments to the claims, the reasons therefor and arguments in support of the patentability of the pending claims are presented above.

In light of the above amendments and remarks, reconsideration and withdrawal of the outstanding rejections is specifically requested. If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully requested to initiate the same with the undersigned.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated:

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